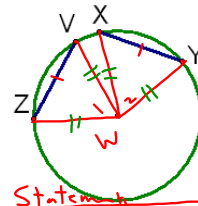


10-3 Arcs and Chords

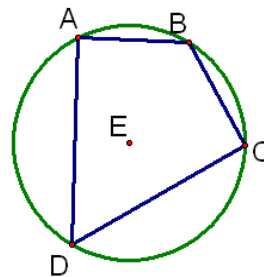
Given: $\overline{XY} \cong \overline{VZ}$ Prove: $\widehat{XY} \cong \widehat{VZ}$

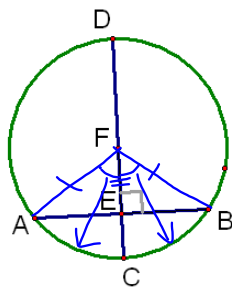
Statements

Reasons

- | | |
|---|---|
| ① $\overline{XY} \cong \overline{VZ}$ | ① Given |
| ② Draw \overline{WZ} , \overline{WV} , \overline{WX} , \overline{WY} | ② Through any 2 pts there exists exactly one line |
| ③ $\overline{WZ} \cong \overline{WV} \cong \overline{WX} \cong \overline{WY}$ | ③ All radii in a circle \cong |
| ④ $\triangle ZWV \cong \triangle XWY$ | ④ SSS |
| ⑤ $\angle 1 \cong \angle 2$ | ⑤ CPCTC |
| ⑥ $\widehat{XY} \cong \widehat{VZ}$ | ⑥ 2 arcs \cong iff their central \angle s \cong |

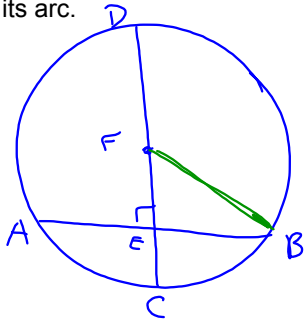
Theorem 10.2--In a circle or in congruent circles, 2 minor arcs are congruent iff their corresponding chords are congruent

ABCD is inscribed in $\odot E$ $\odot E$ is circumscribed about the polygon

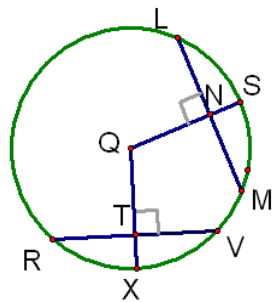


Given: $\overline{AB} \perp \overline{CD}$
Prove: $\overline{AE} \cong \overline{EB}$

Theorem 10-3 In a circle, if the diameter is perpendicular to a chord, it bisects the chord and its arc.

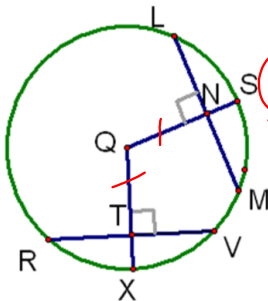


G: $\overline{DC} \perp \overline{AB}$
Concl: $\overline{AE} \cong \overline{EB}$
 $\widehat{AC} \cong \widehat{CB}$



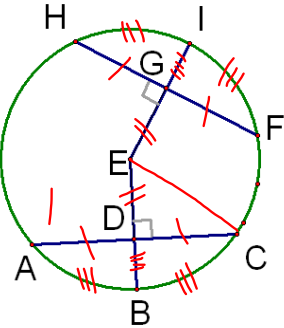
Given: $\overline{LM} \perp \overline{QS}$
 $\overline{LM} \cong \overline{RV}$
 $\overline{QT} \perp \overline{RV}$
Prove: $\overline{QN} \cong \overline{QT}$

Theorem 10.4--In a circle, or in congruent circles, 2 chords are congruent iff they are equidistant from the center

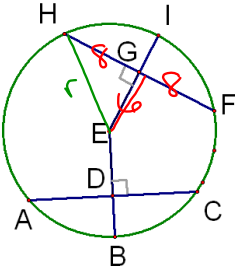


Given: $\overline{LM} \perp \overline{QS}$
 $\overline{LM} \cong \overline{RV}$
 $\overline{QT} \perp \overline{RV}$

Concl: $\overline{QN} \cong \overline{QT}$



Given: $\overline{AC} \cong \overline{HF}$
What can you conclude?



Suppose $HF = 16$
 $GE = 6$

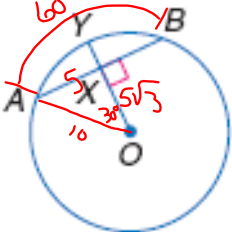
Circumference = _____

$C = 20\pi$

$r^2 = 6^2 + 8^2$
 $36 + 64$
 $r^2 = 100$
 $r = 10$

Circle O has a radius of 10, $AB = 10$, and $m\widehat{AB} = 60$. Find each measure.

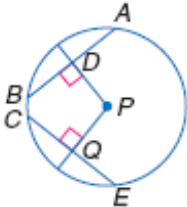
5. $m\widehat{AY}$ 6. AX 7. $OX = 5\sqrt{3}$
 30° 5 60°



Exercises 5-7

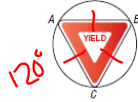
In $\odot P$, $PD = 10$, $PQ = 10$, and $QE = 20$. Find each measure.

8. AB 9. PE



Exercises 8-9

Application 10. **TRAFFIC SIGNS** A yield sign is an equilateral triangle. Find the measure of each arc of the circle circumscribed about the yield sign.



HW
p540
11-34